



Academy of Water Technology and Environ Management
(GSTIN: ADVPB0761D1ZM; PAN ADVPBO761D)

GREEN AUDIT REPORT

**NSHM KNOWLEDGE CAMPUS,
KOLKATA- GROUP OF INSTITUIONS
124, B L SAHA ROAD, KOLKATA- 700 053**

Submitted by

**Dr Ashim Kumar Bhattacharya; PhD; FICCE
Principal Technologist, Resource Person, Trainer and
Consultant
(Water, Energy and Environmental Solution)
Life Fellow Indian Water Works Association**

Executive Director

**Academy of Water Technology and Environ Management
Kolkata; India**

Date of Submission: 16th Dec; 2019.

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INTRODUCTION

Green Audit is a process of systematic approach based on identification, quantification, recording, reporting and analysis of components related to environmental diversity of an establishment. It aims to evaluate and analyze environmental practices of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit is considered as a useful tool for an academic establishment or college to determine how and where they are using the most energy or water resources; based on that the institute can consider then how to implement changes and make savings by optimum use of its existing resources. It also helps and provide guidance to determine the type and volume of waste, which can be used for a recycling to improve waste minimization practices. It can create health consciousness and promote environmental awareness, values and ethics to the students and associated members/staff. It enables for better understanding of Clean and Green Environmental impact on the campus.. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

The rapid urbanization, population growth with industrialization and economic development at local, regional and global level has led to several environmental and ecological challenges. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development through waste minimization and conservation of water resources. At the same time, it must aims to reduce a sizable amount of atmospheric carbon-di-oxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the optimum utilization of environmental resources in the campus to mitigate Global Warming and Climate Change.

OBJECTIVES:



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In recent time, the Green Audit of an institution has been becoming a paramount important for self assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep a clean and safe environment since its inception. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. To evaluate greenery of the college with respect to trees, shrubs, potted and flowering plants in the campus
2. To estimate the energy conservation practices of the college
3. To document the Solid and Liquid Waste management practices with respect to disposal and utilization system
4. To evaluate the ambient environmental condition of air, water and noise of the college
5. To introduce and aware students to real concerns of environment and its sustainability
6. To develop a systematic/structured plan for continuous improvement through optimum utilization of environmental resources and thereby maintaining a clean, healthy and green environment in the campus on long term sustainable basis.



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GREEN AUDIT

Sl No	Parameters covered	Weightage	Score
1	The College campus is green with trees, shrubs and potted plants with flowering plants during season	6	5
2	The Greenery is maintained by watering and pruning of plants	5	4
3	Organic wastes are converted into compost for plants	3	1
4	Use of Plastics(polythene, thermocol, PVC etc.) is minimized	6	5
5	Solid garbage(building debris, unused building materials) is removed from the campus on regular basis. Garbage disposal is earmarked in different categories, depending on the type of garbage, recyclable or non- recyclable)	5	4
6	Waste papers are sold to vendors for recycling	5	5
7	Rejected computers, printers, key boards etc in working condition are donated and others sold to vendors for recycling.	5	5
8	Use of tobacco for smoking or chewing in the campus is banned and care is taken to discourage such activities with proper signage.	5	4
9	The college buildings are kept clean by sweeping and washing at regular intervals. The sweepers have regular mopping timings in accordance with frequency of footfall.	6	5
10	Classrooms have large glass surfaces to minimize the use of electricity.	5	5
11	Regular maintenance of electrical fittings and plumbing are undertaken to keep in proper condition to prevent electricity leakage and water dripping	5	4



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12	College takes initiative to sensitize students and staff about energy conservation, environment and pollution hazards.	5	4
13	All electrical appliances are switched off while not in use	6	4
14	Incandescent lights are replaced by CFL or LED lamps	4	3
15	College takes steps to purchase light, fans, refrigerators and air conditioners with low energy consumption	5	4
16	College is having Rain Water Harvesting System and is making use of stored rainwater	4	2
17	College is in the process of implementing solar street lighting	4	2
18	College has replaced resistance regulators with electronic regulators, CRT monitors with LCD monitors and DOT matrix printers with Deskjet printers	6	5
19	College implement hazardous waste management with soak pits for wastewater management from Chemistry lab and other labs	5	3
20	College observes Environment Day/Earth Day, organize seminars on environment related issues	5	3
	Total	100	77
	Weightage average score on Environment:	77	

Signature of the Auditor: Dr Ashim Kumar Bhattacharya

Date: 15-12-2019

Place: NHSM-Kolkata





ANNEXURE- 1

Recommendation/suggestion for scope of improvent

Sugesstions/recommendations:

1. Recommended for more plantation with Season Flowers on regular basis inside the campus- by creating green lawn by planting grass, herbal plants .
2. Watering to the plants should be maintained as recommended on regular timely basis in a day with a sprinkler type of arrangement to obtain maximum benefit as well as optimum utilization of water resources.
3. Collection, storage and converting the organic waste specially food waste from Kicthen/canteen recommended for converting to Bio fertilizer by Biotechnology Application using specifically designed Bacterial strain/Bioculture- a proper size package converter machine in this regard may be installed in a suitable place in the campus during near future for generating Bio-fertilizer. Capacity may be determined based on quantity of waste generation. The produced Bio fertilizer may be used in gardening inside the campus and may be suitably distribute to the gardeners/farmers as a Green Initiative.
4. Rain water harvesting system – activity initiated but need to be implemented in a proper design and structured manner to minimize the consumption fresh water resources inside the campus. A suitable storage facility may be developed and its utilization may be worked out like fire fighting storage, pavement/ floor washings, toilet flushing etc. Overflow from the storage may recharge to maintain a safe ground water table.
5. As recommended earlier present practices of waste water disposal may be improved with implementation of proper technology which should be simple, easy to operate and maintain. The treated water may be planned for recycled during future days for horticulture, road washing purpose especially during summer days.
6. Institute as reported observing Environment Day/ Earth day for creating awareness as a very good initiative. But based on present environmental scenario- to mitigate water scarcity with Global warming/Climate Change related issues- at Global and Indian perspective -it is advisable to conduct Environmental workshop/seminar -may be by observing days like World Water Day, World Ozone Day for creating more awareness/impact to the student, staff and nearby society for achievement of clean, healthy and sustainable environmental practices.



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Consultant
(Water, Energy and Environmental Solution)
Life Fellow Indian Water Works Association**

Executive Director

**Academy of Water Technology and Environ Management
Kolkata; India**

Date of Submission: 18-12-2020



INTRODUCTION

Green Audit is a process of systematic approach based on identification, quantification, recording, reporting and analysis of components related to environmental diversity of an establishment. It aims to evaluate and analyze environmental practices of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit is considered as a useful tool for an academic establishment or college to determine how and where they are using the most energy or water resources; based on that the institute can consider then how to implement changes and make savings by optimum use of its existing resources. It also helps and provide guidance to determine the type and volume of waste, which can be used for a recycling to improve waste minimization practices. It can create health consciousness and promote environmental awareness, values and ethics to the students and associated members/staff. It enables for better understanding of Clean and Green Environmental impact on the campus.. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

The rapid urbanization, population growth with industrialization and economic development at local, regional and global level has led to several environmental and ecological challenges. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development through waste minimization and conservation of water resources. At the same time, it must aims to reduce a sizable amount of atmospheric carbon-di-oxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the optimum utilization of environmental resources in the campus to mitigate Global Warming and Climate Change.

OBJECTIVES:



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In recent time, the Green Audit of an institution has been becoming a paramount important for self assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep a clean and safe environment since its inception. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. To evaluate greenery of the college with respect to trees, shrubs, potted and flowering plants in the campus
2. To estimate the energy conservation practices of the college
3. To document the Solid and Liquid Waste management practices with respect to disposal and utilization system
4. To evaluate the ambient environmental condition of air, water and noise of the college
5. To evaluate the safety, Hygiene , sanitation and Health practices following based on Covid -19 pandemic situation.
6. To introduce and aware students/Staff members to real concerns of environment and its sustainability with respect to Covid -19 Pandemic
7. To develop a systematic/structured plan for continuous improvement through optimum utilization of environmental resources and thereby maintaining a clean, safe, healthy and green environment in the campus on long term sustainable basis.



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GREEN AUDIT

SI No	Parameters covered	Weightage	Score
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2	The Greenery is maintained by watering and pruning of plants	5	4
3	Organic wastes are converted into compost for plants	3	1
4	Use of Plastics(polythene, thermocol, PVC etc.) is minimized	6	6
5	Solid garbage(building debris, unused building materials) is removed from the campus on regular basis. Garbage disposal is earmarked in different categories, depending on the type of garbage, recyclable or non- recyclable)	5	5
6	Waste papers are sold to vendors for recycling	5	5
7	Rejected computers, printers, key boards etc in working condition are donated and others sold to vendors for recycling.	5	5
8	Use of tobacco for smoking or chewing in the campus is banned and care is taken to discourage such activities with proper signage.	5	5
9	The college buildings/campus are kept clean by sweeping, sanitation and washing at regular intervals. The sweepers have regular mopping timings in accordance with frequency of footfall. The safety, health and hygiene practices following based on Covid -19 Pandemic	6	6



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	situation		
10	Classrooms have large glass surfaces to minimize the use of electricity.	5	5
11	Regular maintenance of electrical fittings and plumbing are undertaken to keep in proper condition to prevent electricity leakage and water dripping	5	4
12	College takes initiative to sensitize students and staff about energy conservation, environment and pollution hazards.	5	4
13	All electrical appliances are switched off while not in use	6	4
14	Incandescent lights are replaced by CFL or LED lamps	4	3
15	College takes steps to purchase light, fans, refrigerators and air conditioners with low energy consumption	5	4
16	College is having Rain Water Harvesting System and is making use of stored rainwater	4	2
17	College is in the process of implementing solar street lighting	4	2
18	College has replaced resistance regulators with electronic regulators, CRT monitors with LCD monitors and DOT matrix printers with Deskjet printers	6	5
19	College implement hazardous waste management with soak pits for wastewater management from Chemistry lab and other labs	5	3
20	College observes Environment Day/Earth Day, organize seminars on environment related issues	5	3
	Total	100	81
	Weightage average score on Environment:	81	

Signature of the Auditor: Dr Ashim Kumar Bhattacharya

Date: 18-12-2020



Place: NHSM-Kolkata

ANNEXURE- 1

Recommendation/suggestion for scope of improvent

Sugesstions/recommendations:

1. Recommended for more plantation with Season Flowers on regular basis inside the campus- by creating green lawn by planting grass, herbal plants .
2. Watering to the plants should be maintained as recommended on regular timely basis in a day with a sprinkler type of arrangement to obtain maximum benefit as well as optimum utilization of water resources.
3. Collection, storage and converting the organic waste specially food waste from Kicthen/canteen recommended for converting to Bio fertilizer by Biotechnology Application using specifically designed Bacterial strain/Bioculture- a proper size package converter machine in this regard may be installed in a suitable place in the campus during near future for generating Bio-fertilizer. Capacity may be determined based on quantity of waste generation. The produced Bio fertilizer may be used in gardening inside the campus and may be suitably distribute to the gardeners/farmers as a Green Initiative.
4. Rain water harvesting system – activity initiated but need to be implemented in a proper design and structured manner to minimize the consumption fresh water resources inside the campus. A suitable storage facility may be developed and its utilization may be worked out like fire fighting storage, pavement/ floor washings, toilet flushing etc. Overflow from the storage may recharge to maintain a safe ground water table.
5. As recommended earlier present practices of waste water disposal may be improved with implementation of proper technology which should be simple, easy to operate and maintain. The treated water may be planned for recycled during future days for horticulture, road washing purpose especially during summer days.
6. Institute as reported observing Environment Day/ Earth day for creating awareness as a very good initiative. But based on present environmental scenario- to mitigate water scarcity with Global warming/Climate Change related issues- at Global and Indian perspective -it is



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advisable to conduct Environmental workshop/seminar -may be by observing days like World Water Day, World Ozone Day for creating more awareness/impact to the student, staff and nearby society for achievement of clean, healthy and sustainable environmental practices.



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OBJECTIVES:

In recent time, the Green Audit of an institution has been becoming a paramount important for self assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The college has been putting efforts to keep a clean and safe environment since its inception. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment and its Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. To evaluate greenery of the college with respect to trees, shrubs, potted and flowering plants in the campus
2. To assess the energy conservation practices of the college
3. To document the Solid and Liquid Waste management practices with respect to disposal and their utilization efficiency with recycle, reuse opportunity.
4. To evaluate the ambient environmental conditions of air, water and noise levels of the college
5. To evaluate the Safety, Hygiene , Sanitation and Health practices following based on Post Covid -19 pandemic situation.
6. To introduce and aware students/Staff members on real concerns of environment, water and its sustainability with respect to present scenerion.
7. To develop a systematic/structured plan for continuous improvement through optimum utilization of environmental resources and thereby maintaining a clean, safe, healthy and green environment in the campus on long term sustainable basis.



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2	The Greenery is maintained by watering and pruning of plants	5	5
3	Organic wastes are converted into compost for plants	3	2
4	Use of Plastics(polythene, thermocol, PVC etc.) is minimized	6	6
5	Solid garbage(building debris, unused building materials) is removed from the campus on regular basis. Garbage disposal is earmarked in different categories, depending on the type of garbage, recyclable or non- recyclable)	5	3
6	Waste papers are sold to vendors for recycling	5	5
7	Rejected computers, printers, key boards etc in working condition are donated and others sold to vendors for recycling.	5	5
8	Use of tobacco for smoking or chewing in the campus is banned and care is taken to discourage such activities with proper signage.	5	5
9	The college buildings/campus are kept clean by sweeping, sanitation and washing at regular intervals. The sweepers have regular mopping timings in accordance with frequency of footfall. The safety, health and hygiene practices following based on Covid -19 Pandemic situation	6	5



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10	Classrooms have large glass surfaces to minimize the use of electricity.	5	5
11	Regular maintenance of electrical fittings and plumbing are undertaken to keep in proper condition to prevent electricity leakage and water dripping	5	5
12	College takes initiative to sensitize students and staff about energy conservation, environment and pollution hazards.	5	4
13	All electrical appliances are switched off while not in use	6	6
14	Incandescent lights are replaced by CFL or LED lamps	4	4
15	College takes steps to purchase light, fans, refrigerators and air conditioners with low energy consumption	5	5
16	College is having Rain Water Harvesting System and is making use of stored rainwater	4	1
17	College is in the process of implementing solar street lighting	4	1
18	College has replaced resistance regulators with electronic regulators, CRT monitors with LCD monitors and DOT matrix printers with Deskjet printers	6	6
19	College implement hazardous waste management with soak pits for wastewater management from Chemistry lab and other labs	5	3
20	College observes Environment Day/Earth Day, organize seminars on environment related issues	5	3
Total		100	84
Weightage average score on Environment:			

Annexure-1: Recommendations/Suggestions for improvement

Signature of the Auditor: Dr Ashim Kumar Bhattacharya

Date: 14th Dec;2022

Place: NHSM-Kolkata



ANNEXURE- 1

Recommendations/suggestions for scope of improvement

1. Recommended for improvement in greenery with some more plantation with Bakul, Neem, Season Flowers, herbal plants etc on regular basis inside the campus.
2. Watering to the plants should be maintained as recommended on regular basis in a day with a sprinkler type of arrangement to obtain maximum benefit as well as optimum utilization of water resources.
3. Collection, storage and exploring the opportunity of recycling the organic waste specially food waste from Kitchen/canteen is strongly recommended for converting to Bio fertilizer with Biotechnology Application using specifically designed selectively adapted Bioculture- a proper size package converter machine in this regard may be installed in a suitable place in the campus during near future. Capacity may be assessed based on quantity of waste generation. The produced Bio fertilizer may be used in horticulture use inside the campus and may be suitably distribute to the gardeners/farmers as a Green Initiative.
4. Rain water harvesting system – activity initiated but need to be planned for implemented the same within a stipulated time frame with a proper design and structured manner to minimize the consumption fresh water resources inside the campus. A suitable storage facility may be developed and its utilization may be worked out like firefighting storage, pavement/ floor washings, toilet flushing etc. Overflow from the storage may sent to the recharge pit to maintain a safe ground water table.
5. As recommended earlier as well present practices of waste water disposal system may be improved with proper design with appropriate technology which must be simple, compact easy to operate and maintain. The treated water may be planned for recycled during future days for horticulture, road washing purpose especially during summer season.
6. Observing Environment Day/ Earth day for creating awareness seems to be a very good initiative by the Institute. But based on present environmental scenario- to mitigate clean and safe water demand meeting SDG 6 with Global warming/Climate Change related issues- it is advisable to conduct Environmental workshop/seminar -may be by observing days like World Water Day, World Ozone Day for creating more awareness/impact to the student, staff and nearby society for achievement of clean, healthy and sustainable environmental practices.